AD-A110 203 ARMY ELECTRONICS RESEARCH AND DEVELOPMENT COMMAND WS--ETC F/G 4/2
MISSILE NUMBERS BN-040, BN-041, BN-042, BN-043, BN-044 AND BN-0--ETC(U)
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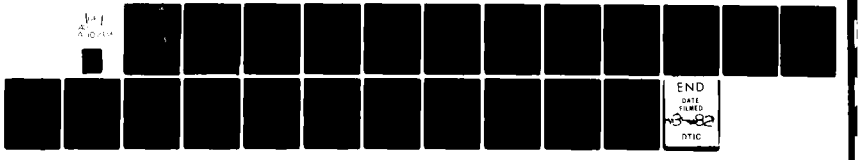

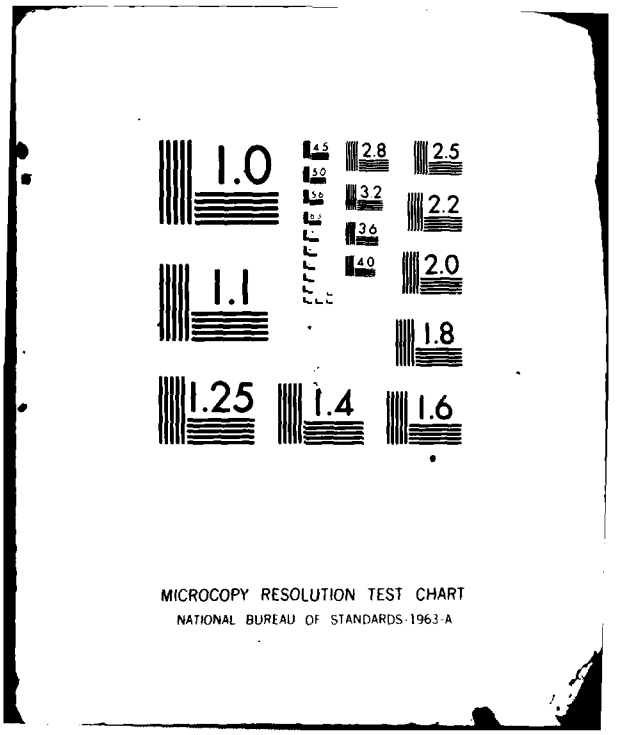
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6.3
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

METEOROLOGICAL DATA REPORT

Missile Numbers BN-040, BN-041, BN-042, BN-043, BN-044 and BN-045
Round Numbers V-194/MD-48, V-195/MD-49, V-196/MD-50, V-197/MD-51,
V-198/MD-52 and V-199/MD-53
17 December 1981

by

DONALD C. KELLER
Program Support Coordinator
Phone Number (505) 679-9568
AVN Number 349-9568

ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

ECOM
UNITED STATES ARMY ELECTRONICS COMMAND,

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
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18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Meteorological data gathered for the launching of the 19304A MLRS, Missile Nos. BN040, BN041, BN042, BN043, BN044 and BN045, Round Nos. V194/MD-48, V195/MD-49, V196/MD-50, V197/MD-51, V198/MD-52 and V199/MD-53 presented in tabular form.

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CONTENTS

INTRODUCTION

19304A MLRS, Missile Numbers BN-040, BN-041, BN-042, BN-043, BN-044 and BN-045, Round Numbers V-194/MD-48, V-195/MD-49, V-196/MD-50, V-197/MD-51, V-198/MD-52, and V-199/MD-53, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1505:11, 1505:16, 1505:20, 1505:25, 1505:30 and 1505:34 MST, 17 December 1981. The scheduled launch times were 1500, 1500:04.5, 1500:09, 1500:13.5, 1500:18 and 1500:22.5 MST.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations.

a. Surface:

(1) Standard surface observations to include pressure, temperature (°C), relative humidity, dew point (°C), density (gm/m^3), wind speed and direction, and cloud cover were made at the LC-33 Met Site at T-0 minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction was also provided in the launch control room.

b. Upper Air:

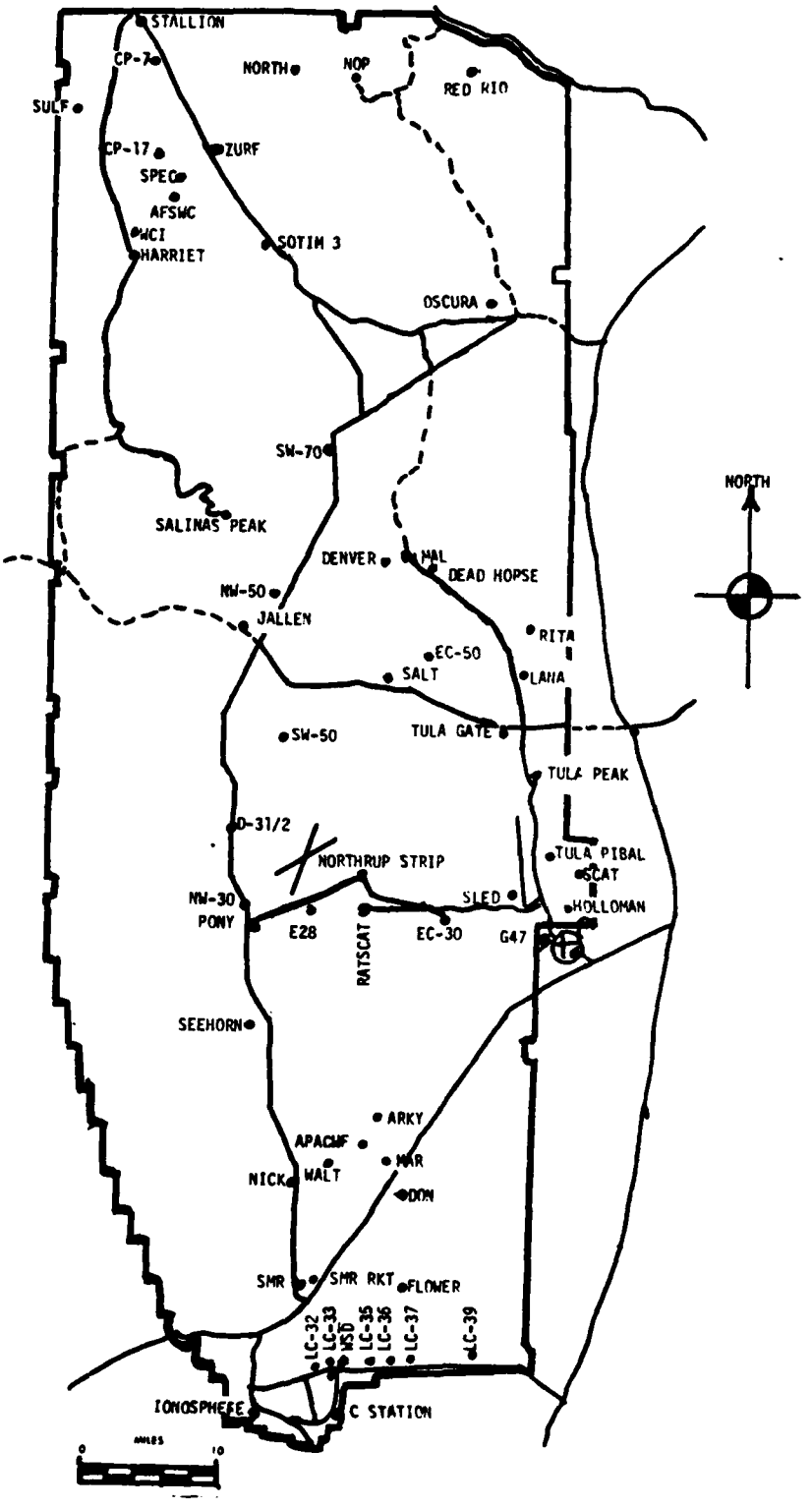
(1) Low level wind data were obtained from pilot-balloon observations at:

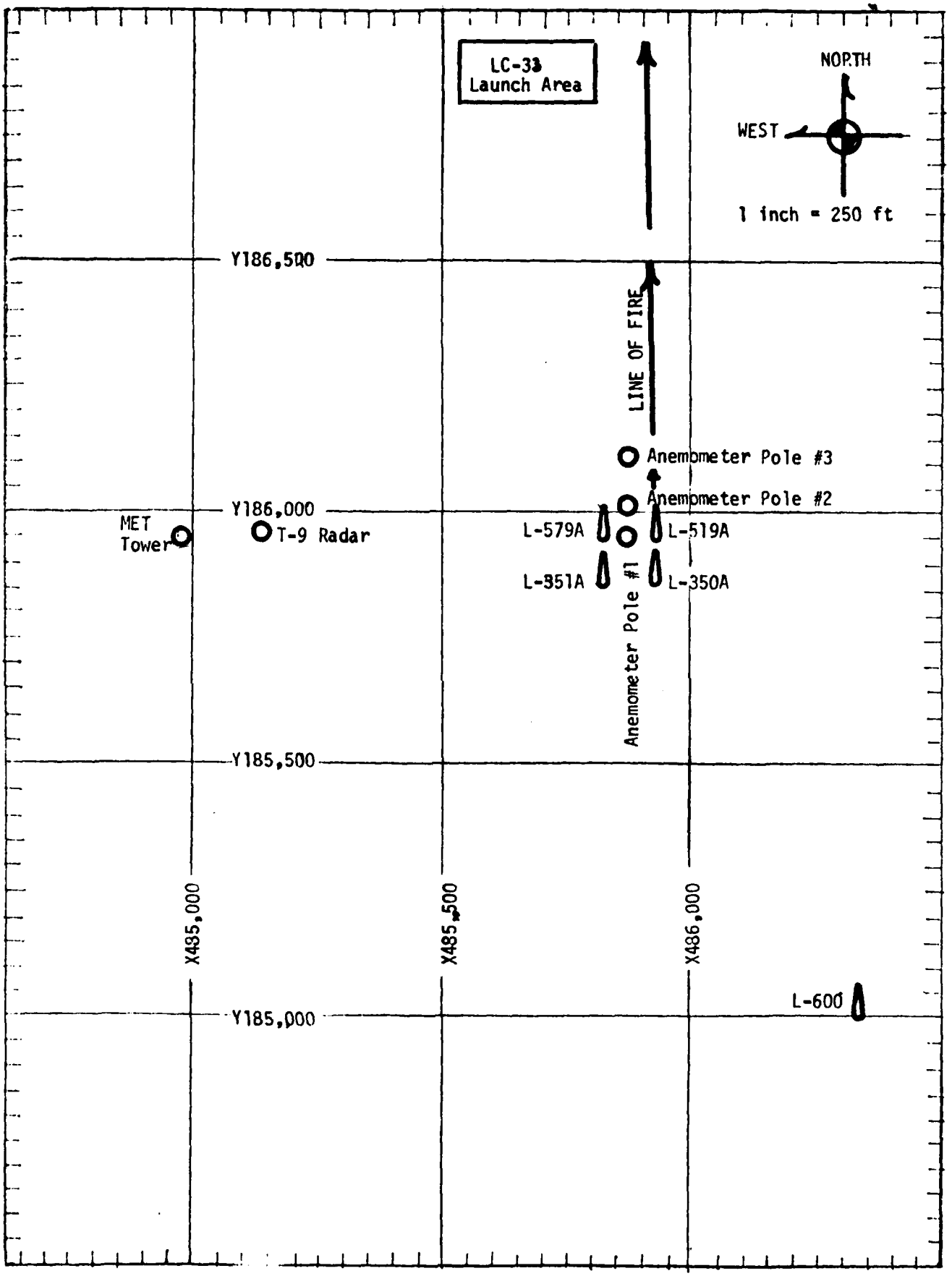
SITE AND ALTITUDE	
WSD	2 KM
NICK	2 KM

(2) Air structure data (rawinsonde) were collected at the following Met Sites:

SITE AND TIME	
WSD	1200 MST
LC-37	1300 MST
WSD	1410 MST
LC-37	1500 MST

WSMR METEOROLOGICAL SITES




LC-39
Launch Area
NORTH
WEST
1 inch = 250 ft
Y186,500
LINE OF FIRE
Anemometer Pole #3
Anemometer Pole #2
Y186,000
MET
Tower
T-9 Radar
L-579A
L-519A
L-351A
L-350A
Anemometer Pole #1
Y185,500
X485,000
X485,500
X486,000
L-600
Y185,000

PROJECT SURFACE OBSERVATION

TABLE 1 STATION LC-33

DATE 17 (DAY) Dec (MONTH) 1981 (YEAR) X= Y= H=

TIME M S T	PRESSURE mbs	TEMPERATURE °F	TEMPERATURE °C	DEW POINT °F	DEW POINT °C	RELATIVE HUMIDITY %	DENSITY gm/m³	WIND DIRECTION degs Tn	WIND SPEED kts	WIND CHARACTER kts	VISIBILITY
1505	883.8		13.8		-8.2	21	1070	030	08		65

OBSTRUCTIONS TO VISIBILITY	CLOUDS 1st LAYER AMT	1st LAYER TYPE	1st LAYER HGT	2nd LAYER AMT	2nd LAYER TYPE	2nd LAYER HGT	3rd LAYER AMT	3rd LAYER TYPE	3rd LAYER HGT	REMARKS
	0	CI	25,000							

PSYCHROMETRIC COMPUTATION

TIME: MST	1505		
DRY BULB TEMP.	13.8		
WET BULB TEMP.	4.6		
WET BULB DEPR.	9.2		
DEW POINT	-8.2		
RELATIVE HUMID.	21		

TABLE 2 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1 X485,874.29 Y185,958.90 H4018.74 38.7 ft. AGL			POLE #2 X485,874.93 Y186,012.00 H4033.57 53.0 ft. AGL			POLE #3 X485,877.29 Y186,116.06 H4063.92 83.6 ft. AGL		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	014	07	T-30	023	04	T -30	032	09
T-20	015	06	T-20	025	06	T -20	042	09
T-10	023	09	T-10	032	07	T -10	031	10
T0.0	016	06	T0.0	044	07	T 0.0	043	07
T+10	027	08	T+10	006	07	T +10	040	08

TABLE 3 LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 62 FEET X484.982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	016	09	T -30	064	07
T-20	062	06	T -20	042	06
T-10	018	06	T -10	037	05
T0.0	030	08	T 0.0	039	07
T+10	025	06	T +10	022	05

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KTS	T-TIME SEC	DIR DEG	SPEED KTS
T-30	038	07	T -30	021	09
T-20	030	07	T -20	013	09
T-10	037	07	T -10	012	08
T0.0	012	07	T 0.0	003	08
T+10	015	06	T +10	008	07

TABLE 4

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 17 December 1981

SITE: WSD
TIME: 1511 MST
WSTM COORDINATES:
X= 488,580.00
Y= 185,045.00
H= 3,989.00

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	030	08
150	023	06
210	024	08
270	025	09
330	357	11
390	016	06
500	006	09
650	023	07
800	016	08
950	021	07
1150	316	07
1350	301	12
1550	311	20
1750	322	27
2000	318	29

Data obtained from NIKE-HERC Radar tracked pilot-balloon observation.

SITE: NICK
TIME: 1505 MST
WSTM COORDINATES:
X= 470,734.56
Y= 255,775.64
H= 4,126.57

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	040	06
150	020	09
210	017	09
270	018	09
330	020	08
390	019	07
500	014	06
650	002	04
800	289	03
950	265	08
1150	293	10
1350	313	14
1550	323	22
1750	324	25
2000	322	28

Data obtained from Single Theodolite tracked pilot-balloon observation.

TABLE 5

AIMING AND T-TIME COMPUTER MET MESSAGES
17 December 1981

WSD 1200 MST		LC-37 1300 MST		WSD 1410 MST		LC-37 1500 MST	
METCM1324064		METCM1324063		METCM1324064		METCM1324063	
171800122886		171900124885		172020122885		172100124885	
00027004	28560886	00587003	28580885	00018004	28670885	00053002	28640885
01017017	28310876	01037013	28460875	01059011	28600875	01003011	28530874
02043013	28050849	02032012	28150849	02031010	28270849	02636010	28260848
03025014	27790809	03003012	27810808	03005008	27890808	03620006	27930808
04561008	27470761	04571013	27530760	04553012	27630760	04544012	27590760
05537022	27440715	05549021	27330714	05557022	27410715	05570025	27370714
06548033	27340672	06554033	27260671	06563033	27280671	06564029	27320671

STATION ALTITUDE 3989.00 FEET MSL
17 DEC. 81 1200 HRS MST
ASCENSION NO. 746

SIGNIFICANT LEVEL DATA
3510020746
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 6

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT
886.5	3989.0	12.0	-6.4	27.0
882.4	4115.9	10.0	-8.1	27.0
850.0	5130.8	7.0	-8.1	33.0
833.0	5674.7	5.6	-10.2	31.0
814.7	6270.4	4.9	-10.4	32.0
758.9	8157.4	.9	-9.1	47.0
740.9	8790.4	.0	-8.9	51.0
714.2	9757.9	.9	-15.9	27.0
700.0	10288.7	1.7	-22.1	15.0
661.7	11772.1	-.5	-23.2	16.0
619.3	13503.1	-3.0	-25.9	15.0
561.2	16037.4	-9.1	-31.6	14.0
501.8	18851.4	-15.0	-34.5	17.0

UPPER AIR DATA

STATION ALTITUDE 3989.00 FEET MSL
17 DEC. 61 1200 HRS MST
ASCENSION NO. 746

3510020746
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 7

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3989.0	886.5	12.0	-6.4	27.0	1081.3	658.4	15.0	4.1	1.000259
4000.0	886.1	11.8	-6.5	27.0	1081.5	658.2	15.1	4.1	1.000258
4500.0	870.0	8.9	-8.1	29.3	1073.1	654.7	17.7	6.9	1.000255
5000.0	854.1	7.4	-8.1	32.2	1059.1	653.0	18.9	9.6	1.000252
5500.0	838.4	6.0	-9.5	31.6	1044.7	651.4	19.5	12.4	1.000247
6000.0	823.0	5.2	-10.3	31.5	1028.6	650.4	19.9	15.1	1.000243
6500.0	807.7	4.4	-10.1	33.8	1012.4	649.5	14.4	12.6	1.000239
7000.0	792.7	3.4	-9.7	37.8	997.3	648.3	4.9	10.1	1.000237
7500.0	777.9	2.3	-9.3	41.8	982.4	647.0	344.8	7.9	1.000234
8000.0	763.4	1.2	-9.2	45.7	967.8	645.8	319.4	8.3	1.000231
8500.0	749.1	.4	-9.0	49.2	952.4	644.9	304.9	11.3	1.000228
9000.0	735.0	.2	-10.1	45.8	935.4	644.6	300.6	15.1	1.000223
9500.0	721.2	.7	-13.6	33.4	916.6	645.0	301.3	19.4	1.000215
10000.0	707.7	1.3	-18.3	21.5	897.7	645.6	304.5	23.6	1.000207
10500.0	694.4	1.4	-22.3	15.1	880.7	645.7	308.0	27.8	1.000201
11000.0	681.4	.6	-22.6	15.5	866.5	644.8	308.3	30.6	1.000198
11500.0	668.6	-.1	-23.0	15.8	852.5	643.9	308.2	32.9	1.000195
12000.0	656.0	-.8	-23.5	15.9	838.7	643.1	311.0	33.5	1.000191
12500.0	643.5	-1.6	-24.3	15.6	825.0	642.2	314.1	34.4	1.000188
13000.0	631.3	-2.3	-25.1	15.3	811.6	641.3	318.7	35.7	1.000185
13500.0	619.4	-3.0	-25.9	15.0	798.3	640.5	321.7	36.7	1.000182
14000.0	607.5	-4.2	-27.0	14.8	786.5	639.0	322.6	37.0	1.000179
14500.0	595.8	-5.4	-28.2	14.6	774.8	637.6	321.6	37.2	1.000176
15000.0	584.3	-6.6	-29.3	14.4	763.4	636.1	319.2	37.4	1.000173
15500.0	573.0	-7.8	-30.4	14.2	752.1	634.7	316.4	37.6	1.000170
16000.0	562.0	-9.0	-31.5	14.0	741.0	633.2	313.2	37.9	1.000167
16500.0	551.0	-10.1	-32.1	14.5	729.4	632.0	311.8	38.9	1.000165
17000.0	540.1	-11.1	-32.5	15.0	717.9	630.7	310.9	40.1	1.000162
17500.0	529.5	-12.2	-33.0	15.6	706.6	629.4	309.4	39.8	1.000159
18000.0	519.1	-13.2	-33.6	16.1	695.5	628.2			1.000157
18500.0	508.9	-14.3	-34.1	16.6	684.6	626.9			1.000154

STATION ALTITUDE 3989.00 FEET MSL
17 DEC. 81 1200 HRS MST
ASCENSION NO. 746

MANDATORY LEVELS
35102U74U
WHITE SANDS

TABLE 8

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

PRESSURE	GEOPOTENTIAL	TEMPERATURE		REL.HUM.	WIND DATA	
		AIR	DEWPOINT	PERCENT	DIRECTION	SPEED
MILLIBARS	FEET	DEGREES CENTIGRADE			DEGREES(TN)	KNOTS
850.0	5127.	7.0	-8.1	33.	19.1	10.3
800.0	6752.	3.9	-9.9	30.	10.7	11.4
750.0	8461.	.5	-9.0	49.	305.7	11.1
700.0	10279.	1.7	-22.1	15.	306.7	20.0
650.0	12227.	-1.2	-23.9	16.	312.2	33.9
600.0	14307.	-5.0	-27.8	15.	322.5	37.2
550.0	16528.	-10.2	-32.1	15.	311.8	39.0

STATION ALTITUDE 4051.37 FEET MSL
17 DEC. 81 1300 HRS MST
ASCENSION NO. 231

SIGNIFICANT LEVEL DATA
351"180231
LC-37

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 9

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT
885.1	4051.4	12.2	-6.7	26.0
850.0	5155.5	7.9	-6.2	36.0
799.2	6811.6	3.6	-8.4	41.0
733.2	9097.6	.5	-8.4	51.0
714.4	9781.1	-.8	-9.9	50.0
700.0	10316.0	-.2	-16.5	28.0
632.6	12970.3	-1.8	-19.6	24.0
606.6	14063.2	-3.9	-21.4	24.0
547.0	16714.2	-10.3	-26.1	26.0
500.0	18970.5	-14.7	-29.9	26.0

STATION ALTITUDE 4051.37 FEET MSL
17 DEC. 81 1300 HRS MST
ASCENSION NO. 231

UPPER AIR DATA
3510180231
LC-37
TABLE 10

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4051.4	885.1	12.2	-6.7	26.0	1078.9	658.6	330.0	2.9	1.000258
4500.0	870.7	10.5	-6.3	30.1	1067.7	656.6	349.1	4.6	1.000256
5000.0	854.9	8.5	-6.2	34.6	1055.5	654.4	358.0	6.8	1.000254
5500.0	839.2	7.0	-6.7	37.0	1041.7	652.6	2.6	9.1	1.000250
6000.0	823.7	5.7	-7.3	38.5	1027.4	651.1	5.0	11.4	1.000246
6500.0	808.5	4.4	-8.0	40.1	1013.2	649.6	357.7	11.9	1.000242
7000.0	793.5	3.3	-8.4	41.8	998.3	648.3	351.0	12.5	1.000238
7500.0	778.7	2.7	-8.3	44.0	982.0	647.5	348.9	12.3	1.000235
8000.0	764.2	2.0	-8.3	46.2	966.0	646.7	346.4	12.7	1.000232
8500.0	749.9	1.3	-8.4	48.4	950.3	645.9	316.6	14.2	1.000228
9000.0	735.9	.6	-8.4	50.6	934.8	645.1	309.3	16.2	1.000225
9500.0	722.1	-.3	-9.3	50.4	920.3	644.1	309.6	19.7	1.000220
10000.0	708.5	-.6	-12.2	41.0	904.2	643.6	311.5	23.8	1.000214
10500.0	695.1	-.3	-16.7	27.7	886.7	643.8	312.0	27.5	1.000206
11000.0	682.0	-.6	-17.3	27.0	871.0	643.4	312.1	31.0	1.000202
11500.0	669.1	-.9	-17.9	26.2	855.5	643.1	312.0	32.4	1.000198
12000.0	656.5	-1.2	-18.5	25.5	840.3	642.7	312.0	32.8	1.000194
12500.0	644.1	-1.5	-19.1	24.7	825.3	642.3	313.1	33.2	1.000191
13000.0	631.9	-1.9	-19.7	24.0	810.8	641.9	314.7	33.6	1.000187
13500.0	619.9	-2.8	-20.5	24.0	798.2	640.8	314.6	33.9	1.000184
14000.0	608.1	-3.8	-21.3	24.0	785.9	639.6	313.7	34.2	1.000181
14500.0	596.4	-5.0	-22.2	24.3	774.1	638.2	312.5	34.8	1.000178
15000.0	584.8	-6.2	-23.1	24.7	762.6	636.8	311.2	35.7	1.000175
15500.0	573.5	-7.4	-23.9	25.1	751.3	635.3	310.8	36.1	1.000172
16000.0	562.5	-8.6	-24.8	25.5	740.2	633.9	310.7	36.4	1.000169
16500.0	551.6	-9.8	-25.7	25.8	729.2	632.4	310.6	36.1	1.000167
17000.0	540.8	-10.9	-26.5	26.0	717.9	631.1	310.4	35.4	1.000164
17500.0	530.1	-11.8	-27.4	26.0	706.4	629.9			1.000161
18000.0	519.7	-12.8	-28.2	26.0	695.1	628.7			1.000158
18500.0	509.5	-13.8	-29.1	26.0	684.0	627.5			1.000155

STATION ALTITUDE 4051.37 FEET MSL
17 DEC. 81 1300 HRS MST
ASCENSION NO. 231

MANDATORY LEVELS
35101802J1
LC-37
TABLE 11

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS
850.0	5152.	7.9	-8.2	36.	359.7	7.5
800.0	6779.	3.7	-8.4	41.	353.8	12.2
750.0	8491.	1.3	-8.4	48.	316.7	14.2
700.0	10306.	-.2	-16.5	28.	311.9	26.2
650.0	12247.	-1.4	-18.8	25.	312.2	33.0
600.0	14330.	-4.6	-21.9	24.	312.9	34.6
550.0	16554.	-10.0	-25.8	26.	310.6	36.0
500.0	18944.	-14.7	-29.9	26.		

STATION ALTITUDE 3989.00 FEET MSL
17 DEC. 81 1410 HRS MST
ASCENSION NO. 747

SIGNIFICANT LEVEL DATA
3510020747
WHITE SANDS
TABLE 12

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT
885.1	3989.0	13.0	-7.1	24.0
880.6	4129.5	12.9	-8.9	21.0
850.0	5096.9	8.8	-9.6	26.0
787.6	7146.8	3.1	-10.5	36.0
778.4	7459.5	3.1	-9.8	38.0
742.0	8730.5	1.4	-9.5	44.0
723.2	9408.4	.7	-16.1	27.0
700.0	10266.8	-.3	-22.3	17.0
688.0	10720.5	-1.0	-23.6	16.0
653.2	12081.4	-.8	-23.4	16.0
619.0	13486.3	-3.0	-25.2	16.0
500.0	18919.9	-14.9	-35.0	16.0

STATION ALTITUDE 3989.00 FEET MSL
17 DEC. 81 1410 HRS MST
ASCENSION NO. 747

UPPER AIR DATA
351020747
WHITE SANDS

TABLE 13

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
3989.0	885.1	13.0	-7.1	24.0	1075.9	659.5	10.0	4.1	1.000256
4000.0	884.7	13.0	-7.2	23.8	1075.5	659.5	10.0	4.1	1.000256
4500.0	868.8	11.3	-9.1	22.9	1062.4	657.5	8.9	5.1	1.000251
5000.0	853.0	9.2	-9.5	25.5	1051.0	655.1	8.1	6.1	1.000248
5500.0	837.4	7.7	-9.7	28.0	1037.4	653.3	7.6	7.0	1.000245
6000.0	821.9	6.3	-9.8	30.4	1023.3	651.7	7.2	8.0	1.000242
6500.0	806.8	4.9	-10.1	32.8	1009.5	650.0	355.2	7.4	1.000239
7000.0	791.9	3.5	-10.4	35.3	995.9	648.4	340.9	7.0	1.000236
7500.0	777.2	3.0	-9.8	38.2	978.9	647.9	322.4	8.9	1.000233
8000.0	762.7	2.4	-9.6	40.6	962.9	647.1	311.0	11.6	1.000229
8500.0	748.5	1.7	-9.5	42.9	947.2	646.4	309.8	14.9	1.000226
9000.0	734.5	1.1	-11.8	37.2	931.7	645.6	309.8	18.2	1.000220
9500.0	720.7	.6	-16.7	25.9	916.4	644.8	313.4	20.9	1.000212
10000.0	707.1	.0	-20.2	20.1	901.2	644.1	316.7	23.6	1.000207
10500.0	693.8	-.7	-23.0	16.5	886.5	643.3	317.0	26.3	1.000202
11000.0	680.7	-1.0	-23.5	16.0	870.8	642.9	316.8	29.0	1.000199
11500.0	667.8	-.9	-23.5	16.0	854.1	643.0	317.4	30.8	1.000195
12000.0	655.2	-.8	-23.4	16.0	837.7	643.1	318.2	32.3	1.000191
12500.0	642.8	-1.5	-24.0	16.0	823.8	642.3	319.2	32.3	1.000188
13000.0	630.6	-2.2	-24.6	16.0	810.5	641.4	320.5	31.9	1.000185
13500.0	618.7	-3.0	-25.2	16.0	797.5	640.4	318.8	31.8	1.000182
14000.0	606.6	-4.1	-26.1	16.0	785.2	639.1	316.9	31.9	1.000179
14500.0	594.8	-5.2	-27.0	16.0	773.1	637.8	315.5	32.3	1.000176
15000.0	583.3	-6.3	-27.9	16.0	761.2	636.5	314.6	32.8	1.000173
15500.0	571.9	-7.4	-28.8	16.0	749.5	635.2	314.8	33.6	1.000170
16000.0	560.8	-8.5	-29.7	16.0	737.9	633.9	314.9	34.4	1.000167
16500.0	549.9	-9.6	-30.6	16.0	726.6	632.6	315.1	35.4	1.000164
17000.0	539.2	-10.7	-31.5	16.0	715.5	631.2	314.4	36.7	1.000162
17500.0	528.7	-11.8	-32.4	16.0	704.5	629.9	312.7	38.2	1.000159
18000.0	518.4	-12.9	-33.4	16.0	693.7	628.6			1.000157
18500.0	508.3	-14.0	-34.3	16.0	683.1	627.2			1.000154

MANDATORY LEVELS

STATION ALTITUDE 3989.00 FEET MSL
17 DEC. 01 1410 HRS MST
ASCENSION NO. 747

351N020747
WHITE SANDS

GEODLTIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 14

PRESSURE	GEOPOTENTIAL	TEMPERATURE AIR	TEMPERATURE DEWPOINT	REL.HUM.	WIND DATA DIRECTION	WIND DATA SPEED
MILLIBARS	FEET	DEGREES CENTIGRADE		PERCENT	DEGREES(TN)	KNOTS
850.0	5093.	8.8	-9.6	26.	8.0	6.2
800.0	6725.	4.3	-10.2	34.	348.9	7.1
750.0	8439.	1.6	-9.5	43.	309.8	14.5
700.0	10257.	-.3	-22.3	17.	317.2	25.0
650.0	12197.	-1.0	-23.6	16.	318.5	32.6
600.0	14278.	-4.7	-26.6	16.	316.1	32.1
550.0	16503.	-9.6	-30.6	16.	315.1	35.5
500.0	18893.	-14.9	-35.0	16.		

SIGNIFICANT LEVEL DATA
3510180232
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STATION ALTITUDE 4051.37 FEET MSL
17 DEC. 81 1500 HRS MST
ASCENSION NO. 232

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 15

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	DEW POINT	REL.HUM. PERCENT
884.7	4051.4	12.6	-5.4	28.0
850.0	5146.0	9.0	-8.1	29.0
794.2	6976.7	4.4	-9.0	37.0
784.0	7322.2	4.1	-8.6	39.0
754.6	8339.2	1.8	-9.4	43.0
735.4	9020.7	.8	-13.2	34.0
700.0	10320.6	.0	-20.8	19.0
678.4	11144.8	-.2	-20.4	20.0
669.4	11496.2	.3	-20.6	19.0
650.6	12245.0	-.8	-21.5	19.0
641.8	12602.3	-.8	-21.5	19.0
561.6	16051.0	-9.1	-27.3	21.0

UPPER AIR DATA
3510180232
LC-37

STATION ALTITUDE 4051.37 FEET MSL
17 DEC. 81 1500 HRS MST
ASCENSION NO. 232

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

TABLE 16

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4051.4	884.7	12.6	-5.4	28.0	1076.7	659.1	30.0	1.9	1.000259
4500.0	870.3	11.1	-6.5	28.4	1064.8	657.4	11.4	3.2	1.000255
5000.0	854.5	9.5	-7.7	28.9	1051.7	655.4	3.3	4.9	1.000251
5500.0	838.9	8.1	-8.2	30.5	1037.5	653.8	359.2	6.5	1.000247
6000.0	823.5	6.9	-8.4	32.7	1023.0	652.4	355.4	7.8	1.000244
6500.0	808.4	5.6	-8.7	34.9	1008.8	650.9	343.1	7.1	1.000240
7000.0	793.5	4.4	-9.0	37.1	994.6	649.5	328.9	7.0	1.000237
7500.0	778.8	3.7	-8.7	39.7	978.5	648.7	315.8	8.8	1.000234
8000.0	764.3	2.6	-9.1	41.7	964.2	647.4	307.7	10.9	1.000230
8500.0	750.0	1.6	-10.3	40.9	949.8	646.2	310.0	14.4	1.000226
9000.0	736.0	.8	-13.1	34.3	934.7	645.2	311.8	18.0	1.000219
9500.0	722.1	.5	-15.7	28.5	918.4	644.8	317.2	21.6	1.000214
10000.0	708.6	.2	-18.6	22.7	902.4	644.3	320.2	25.1	1.000208
10500.0	695.2	-.0	-20.7	19.2	886.3	644.0	320.1	27.3	1.000203
11000.0	682.1	-.2	-20.5	19.8	869.9	643.9	319.9	28.8	1.000200
11500.0	669.3	.3	-20.6	19.0	852.1	644.4	319.6	29.8	1.000196
12000.0	656.7	-.4	-21.2	19.0	838.3	643.6	320.4	30.4	1.000192
12500.0	644.3	-.8	-21.5	19.0	823.6	643.1	321.4	31.0	1.000189
13000.0	632.0	-1.8	-22.1	19.2	810.7	642.0	318.7	31.3	1.000186
13500.0	619.9	-3.0	-23.0	19.5	798.8	640.6	315.9	31.6	1.000183
14000.0	608.0	-4.2	-23.8	19.8	787.0	639.1	314.0	31.8	1.000180
14500.0	596.3	-5.4	-24.7	20.1	775.4	637.7			1.000177
15000.0	584.9	-6.6	-25.5	20.4	764.0	636.2			1.000174
15500.0	573.7	-7.8	-26.4	20.7	752.8	634.8			1.000171
16000.0	562.7	-9.0	-27.3	21.0	741.7	633.3			1.000169

STATION ALTITUDE 4051.37 FEET MSL
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MANDATORY LEVELS
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TABLE 17

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL.HUM.	WIND DATA	
		AIR	DEWPOINT	PERCENT	DIRECTION	SPEED
MILLIBARS	FEET	DEGREES CENTIGRADE			DEGREES(TN)	KNOTS
850.0	5142.	9.0	-8.1	29.	1.8	5.3
800.0	6776.	4.9	-8.8	36.	335.4	6.9
750.0	8493.	1.6	-10.3	41.	310.0	14.4
700.0	10310.	.0	-20.8	19.	320.1	20.5
650.0	12256.	-.8	-21.5	19.	321.0	30.8
600.0	14339.	-5.0	-24.4	20.	312.7	32.0


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